What is claimed is:

1. A radio frequency (RF) amplifier comprising:

a resonant circuit having a plurality of circuit elements, said plurality of circuit elements including a voltage variable capacitance, said resonant circuit having a resonant frequency that depends upon a present value of said voltage variable capacitance; and

a voltage adjustment unit in communication with said voltage variable capacitance to vary a bias voltage on said voltage variable capacitance to modify a capacitance value thereof.

2. The RF amplifier claimed in claim 1, wherein:

said voltage variable capacitance is a diffusion capacitance associated with a first transistor within the RF amplifier.

3. The RF amplifier claimed in claim 2, wherein said first transistor is part of a cascode core within said RF amplifier.

4. The RF amplifier claimed in claim 2, comprising:

an output terminal to deliver an amplified signal to other circuitry, said first transistor being connected to said output terminal.

5. The RF amplifier claimed in claim 2, comprising:

a second transistor connected between said first transistor and a ground node, said second transistor having an input terminal to receive an RF input signal to be amplified by said RF amplifier.

6. The RF amplifier claimed in claim 2, wherein:

said first transistor includes an input terminal to receive an RF input signal to be amplified by said RF amplifier.

7. The RF amplifier claimed in claim 2, wherein:

said voltage adjustment unit includes a third transistor having an input terminal to receive a control signal, said third transistor to vary a voltage drop between a supply node and said first transistor in response to variations in said control signal.

8. The RF amplifier claimed in claim 1, wherein:

said voltage adjustment unit is connected between said resonant circuit and a supply node.

9. The RF amplifier claimed in claim 1, wherein:

said voltage adjustment unit includes an input port to receive a control signal, said RF amplifier further including control circuitry coupled to said input port of said voltage adjustment unit to generate said control signal.

10. The RF amplifier claimed in claim 9, wherein:

said control circuitry includes circuitry for tuning an operational frequency range of said RF amplifier using said control signal.

11. The RF amplifier claimed in claim 9, wherein:

said control circuitry includes circuitry for automatically tuning an operational frequency range of said RF amplifier in the field to compensate for component aging.

12. The RF amplifier claimed in claim 1, wherein:

said resonant circuit and said voltage adjustment unit are integrated on a common semiconductor chip.

13. The RF amplifier claimed in claim 12, further comprising:

an integrated circuit package housing said common semiconductor chip, said integrated circuit package having a first pin connected to a supply node on said chip to

connect said RF amplifier to an external power supply, a second pin connected to a ground node on said chip to connect said RF amplifier to an external ground, and a third pin connected to an input terminal of said voltage adjustment unit to connect said RF amplifier to an external control signal source.

14. A method for tuning an integrated RF amplifier circuit comprising:

providing an integrated RF amplifier including a resonant circuit having a plurality of circuit elements, said plurality of circuit elements including a voltage controllable parasitic capacitance;

monitoring a resonant frequency of said integrated RF amplifier; and

adjusting a bias voltage level on said voltage controllable parasitic capacitance until said resonant frequency is within a predetermined frequency range.

15. The method claimed in claim 14, wherein:

said method is performed as part of a manufacturing test process.

16. The method claimed in claim 14, comprising:

recording, after adjusting said bias voltage level, a parameter value related to a resulting bias voltage level.

17. The method claimed in claim 16, comprising:

repeating adjusting and recording for another predetermined frequency range.

18. The method claimed in claim 17, comprising:

generating a table of parameter values corresponding to a plurality of different operational frequency bands for subsequent use in tuning said integrated RF amplifier.

19. A radio frequency (RF) amplifier comprising:

a first transistor having first and second output terminals, said first output terminal of said first transistor being coupled to an output node of said RF amplifier,

said first transistor having a parasitic capacitance that varies with a bias voltage applied to said first output terminal of said first transistor, said first transistor being held in saturation during operation of said RF amplifier;

a resonant circuit coupled to said output node of said RF amplifier to provide a filter response on said output node, said parasitic capacitance of said first transistor affecting a center frequency of said filter response; and

a tuning transistor having an input terminal and first and second output terminals, said input terminal of said tuning transistor to receive a control signal, said first output terminal of said tuning transistor being coupled to a supply node, and said second output terminal of said tuning transistor in communication with said first output terminal of said first transistor, said tuning transistor to vary a voltage drop between said supply node and said first output terminal of said first transistor in response to variations in said control signal during amplifier operation.

20. The RF amplifier claimed in claim 19, wherein:

said tuning transistor blocks power supply noise from said supply node during amplifier operation.

21. The RF amplifier claimed in claim 19, wherein:

said first transistor, said resonant circuit, and said tuning transistor are integrated on a common semiconductor chip.

22. The RF amplifier claimed in claim 19, wherein said RF amplifier is a single ended amplifier.

23. The RF amplifier claimed in claim 19, wherein said RF amplifier is a differential amplifier.

24. The RF amplifier claimed in claim 19, comprising:

a controller to generate said control signal on said input terminal of said tuning transistor, said controller to generate said control signal in a manner that tunes an operational frequency range of said RF amplifier.

25. A multi-band radio frequency (RF) receiver system comprising:

a multi-band low noise amplifier (LNA) to amplify a receive signal, said multi-band LNA including a resonant circuit having a plurality of circuit elements, said plurality of circuit elements including a voltage variable capacitance, said multi-band LNA having a plurality of operational frequency bands, wherein a present operational frequency band of said multi-band LNA depends upon a present value of said voltage variable capacitance;

a receiver coupled to an output of said multi-band low noise amplifier to process an amplified version of said receive signal; and

a controller coupled to said multi-band LNA to change a value of said voltage variable capacitance when a change in the operational frequency range of said multi-band LNA is desired.

26. The multi-band RF receiver system claimed in claim 25, wherein:

said multi-band LNA includes a voltage adjustment unit to vary a bias voltage on said voltage variable capacitance based on a control signal generated by said controller.

27. The multi-band RF receiver system claimed in claim 26, wherein:

said voltage adjustment unit includes a transistor having two output terminals that are coupled between a supply terminal and said voltage variable capacitance.

28. The multi-band RF receiver system claimed in claim 25, wherein: said multi-band LNA includes a cascode core having multiple transistors, wherein said voltage variable capacitance of said resonant circuit is a parasitic capacitance of one of said multiple transistors.

29. The multi-band RF receiver system claimed in claim 25, wherein: said multi-band LNA, said receiver, and said controller are integrated onto a common semiconductor chip.

30. The multi-band RF receiver system claimed in claim 25, comprising: a look up table (LUT) to store a plurality of control values that each correspond to a particular operational frequency band of said multi-band LNA.

31. An electronic system comprising:

an antenna;

a cascode core including an input transistor to receive a signal from the antenna and a first transistor having a parasitic capacitance that varies with a bias voltage applied thereto; and

a tuning transistor to vary the bias voltage on the first transistor.

32. The electronic system of claim 31 further comprising a resonant circuit coupled between the tuning transistor and the cascode core, said parasitic capacitance of said first transistor affecting a center frequency of said resonant circuit.

33. The electronic system of claim 31 further comprising a controller to influence the bias voltage on the first transistor.

34. The electronic system of claim 33 further comprising a lookup table coupled to the controller, the lookup table to store values that influence the bias voltage on the first transistor.

35. An electronic system comprising:

an amplifier including a cascode core having a transistor with a parasitic capacitance that varies with a bias voltage, and including a control transistor to vary the bias voltage;

a receiver to receive a first signal from the amplifier; and

a signal processing unit to receive a second signal from the receiver.

36. The electronic system of claim 35 further comprising a lookup table to influence operation of the control transistor.

37. The electronic system of claim 36 further comprising a controller coupled between the lookup table and the control transistor.

38. The multi-band RF receiver system claimed in claim 25, wherein:

said multi-band LNA is a differential amplifier.

39. The multi-band RF receiver system claimed in claim 25, wherein:

said resonant circuit further comprises an inductor and a capacitor coupled in parallel.

40. The multi-band RF receiver system claimed in claim 25, further comprising:

a receive antenna coupled to said multi-band LNA to receive said receive signal from an exterior environment and to transfer said receive signal to said multi-band LNA; and

a signal processing unit coupled to said receiver to receive a baseband signal to process said baseband signal.

41. The electronic system of claim 32, wherein:

said resonant circuit further comprises an inductor and a capacitor coupled in parallel.

42. The electronic system of claim 33, wherein:

said tuning transistor comprises two output terminals coupled between a supply terminal and said first transistor, said tuning transistor further comprising a control terminal coupled to said controller to receive a control signal.

43. The electronic system of claim 31, wherein:

said cascode core, said tuning transistor, and a resonant circuit coupled between said cascode core and said tuning transistor comprise a low noise amplifier (LNA) to amplify said signal from said antenna to generate an amplified signal; and

further comprising:

a receiver coupled to the LNA to receive said amplified signal from said LNA and to generate a baseband signal from said amplified signal; and

a signal processing unit coupled to said receiver to receive said baseband signal to process said baseband signal.

44. The electronic system of claim 43, wherein:

said LNA is a differential amplifier.

45. The electronic system of claim 43, wherein:

said LNA, said receiver, a controller coupled to the LNA, and a look up table (LUT) coupled to the controller are integrated on a common semiconductor chip.

46. The electronic system of claim 37, wherein:

said amplifier, said receiver, said controller, and said lookup table are integrated on a common semiconductor chip.

47. The electronic system of claim 35, wherein:

said amplifier further comprises a resonant circuit coupled between said cascode core and said control transistor, said resonant circuit comprising an inductor and a capacitor coupled in parallel.

48. The electronic system of claim 47, wherein:

said amplifier is a differential amplifier.

49. The electronic system of claim 35, further comprising:

a receive antenna coupled to said amplifier to receive an RF signal from an exterior environment and to transfer said RF signal to said amplifier.

50. An electronic system comprising:

a dipole antenna to receive an RF signal from an exterior environment;

a low noise amplifier (LNA) coupled to said dipole antenna to receive said RF signal to amplify said RF signal with a resonant circuit to generate an amplified signal,

said resonant circuit comprising a parasitic capacitance that varies with a bias voltage on said parasitic capacitance to adjust a resonant frequency of said resonant circuit;

a controller coupled to said LNA to vary said bias voltage on said parasitic capacitance;

a look up table coupled to said controller to provide control values to said controller;

a receiver coupled to said LNA to receive said amplified signal from said LNA and to generate a baseband signal from said amplified signal; and

a signal processing unit coupled to said receiver to receive said baseband signal to process said baseband signal.

51. The electronic system of claim 50, wherein:

said LNA is a differential amplifier.

52. The electronic system of claim 50, wherein:

said resonant circuit comprises an inductor and a capacitor coupled in parallel between a cascode core and a control transistor, said cascode core comprising a transistor comprising said parasitic capacitance, said control transistor comprising a control terminal coupled to said controller to receive a control signal based on said control values from said look up table, said control transistor further comprising two terminals coupled between a supply terminal and said parasitic capacitance.

53. A method for operating an electronic system comprising:

receiving an RF signal at an antenna;

amplifying said RF signal in an amplifier coupled to said antenna with a resonant circuit in said amplifier to generate an amplified signal;

adjusting a bias voltage on a parasitic capacitance in said resonant circuit with a controller coupled to said amplifier to vary said parasitic capacitance to change a resonant frequency of said resonant circuit;

providing control values to said controller from a look up table coupled to said controller, said controller to adjust said bias voltage according to said control values;

generating a baseband signal from said amplified signal in a receiver coupled to said amplifier; and

processing said baseband signal in a signal processing unit coupled to said receiver.

54. The method of claim 53, wherein:

amplifying said RF signal further comprises amplifying said RF signal in a differential amplifier coupled to said antenna with a resonant circuit in said differential amplifier to generate said amplified signal.

55. The method of claim 53, wherein:

adjusting a bias voltage further comprises adjusting said bias voltage on a transistor comprising said parasitic capacitance in a cascode core in said resonant circuit by controlling a control transistor with a control signal from said controller, said control transistor further comprising two terminals coupled between a supply terminal and said parasitic capacitance; and

amplifying said RF signal further comprises filtering said RF signal to pass signal components within a desired operational frequency range with said resonant circuit, said resonant circuit comprising an inductor and a capacitor coupled in parallel between said cascode core and said control transistor to generate said amplified signal.

56. The method of claim 53, wherein adjusting a bias voltage further comprises:

monitoring said resonant frequency of said resonant circuit; and

adjusting said bias voltage on a transistor comprising said parasitic capacitance in a cascode core in the resonant circuit by controlling a control transistor with a control signal from said controller until said resonant frequency is within a predetermined frequency range, said control transistor further comprising two terminals coupled between a supply terminal and said parasitic capacitance.

57. The method of claim 56, further comprising:

blocking power supply noise from said supply terminal during operation of said amplifier with said control transistor.

58. The method of claim 53, wherein adjusting a bias voltage further comprises:

providing a control value to said controller from said look up table to change a frequency range of the amplifier; and

applying said control value to the amplifier to adjust said bias voltage to tune said amplifier to a desired frequency range.

59. The method of claim 58, further comprising:

monitoring the amplified signal from the amplifier in the controller to confirm that the amplifier is tuned;

modifying said control value applied to the amplifier from the controller to adjust said bias voltage to tune said amplifier; and

storing said modified control value in the look up table.

60. The method of claim 53, wherein adjusting a bias voltage further comprises:

providing a control value to said controller from said look up table to change a frequency range of said receiver; and

applying said control value to said receiver to tune said receiver to a desired frequency range.

61. The method of claim 53, wherein adjusting a bias voltage further comprises varying a supply voltage applied to said amplifier from said controller to adjust said bias voltage on said parasitic capacitance.

62. The method of claim 53, wherein amplifying said RF signal further comprises amplifying said RF signal in a low noise amplifier (LNA) coupled to said antenna.

63. The method of claim 53, further comprising:

recording, after adjusting said bias voltage, a parameter value related to said bias voltage for an operational frequency range;

repeating the adjusting and recording operations for a different operational frequency range; and

generating a table of parameter values corresponding to a plurality of different operational frequency ranges for subsequent use in tuning said amplifier.